

ELECTRONIC MAIL SYSTEM WITH RF COMMUNICATIONS TO MOBILE PROCESSORS

This application is a Continuation application of U.S. Ser. No. 07/702,939, filed May 20, 1991, now U.S. Pat. No. 5,436,960; Ser. No. 07/702,938, filed May 20, 1991, now U.S. Pat. No. 5,479,472, and Ser. No. 08/247,466, filed May 23, 1994, now U.S. Pat. No. 5,938,611; which is a Continuation of U.S. Ser. No. 07/702,319, filed May 20, 1991 (now abandoned).

APPENDIX

An Appendix containing a listing of control programs for controlling the transmission of information between an RF receiver and a destination processor and controlling the operation of an interface switch in accordance with the invention is attached. The programs are written in the C programming language. The program for controlling the transmission of information from the RF receiver to the destination processor appears at pages 1-9 and the program for controlling the operation of the interface switch appears at pages 10-12. The Appendix contains subject matter which is copyrighted. A limited license is granted to anyone who requires a copy of the program disclosed therein for purposes of understanding or analyzing the invention, but no license is granted to make a copy for any other purposes including the loading of a processing device with code in any form or language.

CROSS-REFERENCE TO RELATED APPLICATIONS

Reference is made to other applications which are filed on even date herewith which are incorporated by reference in their entirety.

U.S. patent application Ser. No. 07,702,319, (now U.S. Pat. No. 5,438,611), entitled "Electronic Mail System With RF Communications to Mobile Processors Originating From Outside of the Electronic Mail System" and

U.S. patent application Ser. No. 07,702,938 (now U.S. Pat. No. 5,479,472), entitled "System for Interconnecting Electronic Mail Systems By RF Communications"

TECHNICAL FIELD

The present invention relates to electronic mail systems for transmitting information between processors.

BACKGROUND ART

The use of computers to send and receive electronic mail messages is becoming very popular globally. Numerous companies (both network and software related) offer electronic mail packages (E Mail) and services. Currently, electronic mail services provide a convenient alternative to the more formal facsimile transmissions of memos and documents. Electronic mail is typically used to send relatively short informal messages between computers within an organization, or to a party located at a distant location or company. Electronic mail services are basically a wire line-to-wire line, point-to-point type of communications. Electronic mail, similar to facsimile transmissions, provides a one-way message. A recipient typically does not have to interact with the message. Electronic mail, unlike facsimile, is a non-real-time message transmission architecture.

FIG. 1 illustrates a block diagram of a typical electronic mail system 10 in commercial use such as by AT&T Cor-

poration. The electronic mail system 10 is comprised of a plurality of single processors or groups of processors #1-#N with N being any number with each group having individual processors A-N with N being any number. The groups of processors #1-#N may be distributed at locations which are linked by the public switch telephone network 12. The individual processors may be portable personal computers with a modem which are linked to the public telephone switch network 12 through wired or RF communications as indicated by a dotted line. Groups of associated processors #1-#3 may have diverse configurations with the illustrated configurations only being representative of possible architectures of groups of associated processors. The groups of associated processors may be connected to a host or main-frame computer through various communication mechanisms such as direct telephone communications (#1), communications through a local area network (#2), or communications through a private automatic branch exchange (#3). It should be understood that the illustrated architecture of the single and associated groups of processors is only representative of the state of the art with numerous variations being utilized. Many of the groups of associated processors are contained within the database network of a single company or organization located at distributed geographical locations throughout a country or in different countries.

Communications between an originating processor A-N, which may be any of the processors within the groups of associated processors #1-#3 or processor #N and a destination processor A-N are completed through the public switch telephone network 12 to one or more gateway switches with mailboxes 14 which function to store the message for delivery to the destination processor at a later point in time. The gateway switches with mailboxes 14 have a storage location, associated with each subscriber which may be any of the computers A-N within the associated groups of computers #1-#3 and individual computers #N, which provides retrieval capability of the electronic message when it is not delivered directly to the destination processor A-N such as when the destination processor does not go directly off hook in response to an attempt to deliver the message from storage in the electronic mail gateway mailbox storage location associated with the destination processor. In order to originate an electronic mail message, the originating processor A-N calls an associated gateway switch with mailboxes 14 via telephone through the usage of a modem connection. This connection is made through the public switch network 12. A gateway switch with mailboxes 14 answers and provides a data connection to the originating processor A-N. The gateway switch with mailboxes 14 typically contains the originating processor A-N file and verifies that the sending processor is able to originate an electronic mail message via some form of password protection. Upon verification of the entry password, the electronic gateway switch with mailboxes 14 down loads software and entry screens that are displayed on the originating processor to permit a message to be composed. Thereafter, the message is composed and transferred from the originating processors gateway switch with mailboxes 14 to the destination processors gateway switch with mailboxes 14 where the message is stored and an attempt is made to deliver the message to the destination processor via telephone connection through the public switch telephone network 12.

Electronic mail systems have several common items that must be entered in order to originate and send (format) an electronic message. These items include the destination address, which consists of either the person or company's